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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Kunio Fukuda

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10/13/2004

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EXAMINER

SHAH, CHIRAG G

ART UNIT

PAPER NUMBER

2664

DATE MAILED: 10/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/879,332	<b>Applicant(s)</b> FUKUDA, KUNIO	
	<b>Examiner</b> Chirag G Shah	<b>Art Unit</b> 2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 June 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>03/25/02</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-14 rejected under 35 U.S.C. 102(e) as being anticipated by McFarland et al. (U.S. Patent No. 6,628,673), herein after McFarland.

Referring to claims 1, 4, and 7, McFarland discloses in figure 3 and 4 of a radio communication system in which radio communication is performed between a base station 400 and a mobile stations 100-300, the base station 400 comprising:

first transmitting means for transmitting a first transmitted radio signal to the mobile station [as disclosed in figure 4, base station 400 is transmitting and the other nodes 100-300 are receiving];

first receiving means for receiving a radio signal from the mobile station [as disclosed in figure 3 and claim 1, where multiple nodes devices 100-300 of varying levels of complexity communicate with a base station, where the base station is simultaneously receiving the signals] and

first control means for controlling the first transmitting means and the first receiving means to achieve high-speed communication between the base station and the

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mobile station by using at least two basic channels [column 4, lines 51-65, multiple nodes devices 100-300 of varying levels of complexity may communicate with a base station 400 over a single OFDM system by allowing the simpler devices 100 and 200 to communicate on a few sub-channels 315 within the OFDM channel, and ensuring that these do not interfere with the most complex device 300 using most of the sub-channels 310] when the mobile station exists in the specific area within a cell to which a basic-frequency channel is assigned, the basic-frequency channel having a multi-carrier OFDM signal [as disclosed in claim 1 and column 7, lines 10 to column 8, lines 40, the base station includes a control means for controlling the frequencies, timing of signals and power of signals transmitted by at least one node. Frequency control in the system also may be accomplished by locking all the transmission frequencies in the nodes 100-300 to the frequencies transmitted by the base station 400. Alternatively, frequency control may be implemented by allowing the base station 400 to feed back information to the node in the form of a command signal, adjusting the transmit frequency in a close loop fashion]

Note according to the IEEE 802.11a standard as is applied utilizes OFDM, which is a multi-carrier transmission technique, which allows communication to occur at extremely high data speeds by transmitting data over multiple frequency channels over a wide frequency range comprising:

second transmitting means for transmitting a second transmitted radio signal to the base station [as disclosed in claim 2 and in column 4, lines 51-67, a plurality of nodes, each transmitting simultaneously with other nodes a signal unique to that node and representative of at least one non-overlapping sub-channel conveying information] ;

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second receiving means for receiving a second received radio signal from the base station [as disclosed in claim 3, the nodes are for simultaneously receiving the signal transmitted by the base station and processing it to generate, for each information-conveying sub-channel corresponding to the node, a data stream representative of the information conveyed thereby] and

second control means for controlling the second transmitting means and the second receiving means to achieve high-speed communication between the base station and the mobile station by using at least two basic-frequency channels, when the mobile station exists in the specific area [as disclosed in column 4, lines 51-67 and in column 6, lines 5-50, high-speed communication between the base station 400 and the mobile station 300 is achieved using two frequency basic channels; furthermore, as disclosed in column in column 7, lines 10 to column 8, lines 40, a second control means for controlling transmission and reception exists in the mobile station since nodes 100-300 are able to lock all the transmission frequencies transmitted by the base station 400. In addition, the mobile station is able to implement open-loop control by each node being able to adjust its power based on the power level it is receiving from the base station] as claim.

Referring to claims 2, 5, and 8, McFarland discloses wherein the base station and/or the mobile station determine whether the mobile station exists in the specific area, from the first received radio signal or the second received radio signal [as disclosed in claim 1, a base station receives signals transmitted from each nodes and processes them to generate a signal representative of the information conveyed thereby, the base station including means for generating and transmitting a command signal to the at least one

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node based on the power of signals from the at least one node as received by the base station, thus, clearly establishing that the existence of mobile station in a specific area is determined by signal strength] as claim.

Referring to claims 3, 6, and 9, McFarland discloses that the OFDM signal is composed of the sub-carrier channels provided among the basic-frequency channels [see column 6, lines 1-50, claims 1&3 and column 2, lines 16-34, and column 4, lines 51-67] as claim.

Referring to claim 10, MaFarland discloses in figure 3, 4, claims 1&3 of a radio communication system in which radio communication is performed between a base station and a mobile station, the radio communication system comprising:

a plurality of first-type cells to which each of a plurality of basic-frequency channels is assigned respectively, each channel comprising a multi-carrier OFDM signal [as disclosed in figure 5, claim 1, and column 6, lines 1-50, to prevent interferences and/or cancellation of a small range of frequencies due to multi-path propagation effects, the subset of channels assigned to a node might be spaced out across the entire range of sub-channels available within the band. For example, four of 48 sub-channels might be used 1, 13, 24 and 37. Furthermore as disclosed in claims 1&3, column 2, lines 16-34, column 4, lines 51-67 and column 7, lines 10-40, a plurality of nodes within a 5 GHz, each base station is assigned a unique non-overlapping subchannel for transmitting and receiving information; each channel comprises a OFDM signal since the communication system utilizes an OFDM based on the IEEE 802.11a standard] and

a plurality of second-type cells, each of which is provided in one first-type cell of the plurality of first-type cells, to which the basic-frequency channels are assigned to

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achieve high-speed communication between the base station and the mobile station [as disclosed in claims 1&3 and column 2, lines 16-34, column 4, lines 51-67 and column 7, lines 10-40, a plurality of groups of sub-channels each corresponding to one of a plurality of nodes and wherein the nodes are simultaneously receiving the signal transmitted by the base station and processing it to achieve communication between mobile and base station] as claim.

Referring to claims 11 and 14, McFarland discloses that the OFDM signal is composed of the sub-carrier channels provided among the basic-frequency channels [see column 6, lines 1-50, claims 1&3 and column 2, lines 16-34, and column 4, lines 51-67 ] as claim.

Referring to claim 12, McFarland discloses in figures 3 and 4 of a radio communication system in which radio communication is performed between a base station (base station) and a mobile station (laptop computer), the base station [base station] comprising the steps of:

performing radio communication between the base station and the mobile station through a basic-frequency channel assigned to a cell, the basic-frequency channel comprising a multi-carrier OFDM signal [see in claims 1&3, abstract, figure 3-5 and in column 2, line 15-25, column 6, lines 1-50, 802.11a uses OFDM that is a multi-carrier transmission technique that uses a plurality of orthogonal subcarriers. For example, four of 48 sub-channels 1, 13, 25 and 37 may be used to prevent interference. A node (base station) may use a single or small subset of subchannels (nonoverlapping) in order to communicate with mobile station as shown in figure 5 and column 6, lines 1-50] and

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performing high-speed communication between the base station and the mobile station, through the basic-frequency channels when the mobile station exists in a specific area within the cell [as disclosed in column 6, lines 1-50 and claims 1-3, a given sub-channel may work poorly for some of the nodes, but it might work well for other nodes. The sub-channels could therefore be intelligently allocated, swapping the assignments between nodes until all nodes are satisfied. This establishes that the channels work poorly when out of range and work well when in range.] as claim.

Referring to claim 13, McFarland discloses wherein the base station and/or the mobile station determine whether the mobile station exists in the specific area, from the first received radio signal or the second received radio signal [as disclosed in claim 2, each node (mobile) transmits to base station on a non-overlapping channel information, thus establishing that mobile station exists in the specific area] as claim.

### *Conclusion*

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
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**Or faxed to:**

(703)305-3988, (for formal communications intended for entry)

**Or:**

(703)305-3988 (for informal or draft communications, please label  
"Proposed" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G Shah whose telephone number is 571-272-3144.

The examiner can normally be reached on M-F 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs  
October 8, 2004

  
Ajit Patel  
Primary Examiner